

WATER-BEARING PLANTS OF PANAMA WHICH HARBOR
MOSQUITOES, WITH A NEW SPECIES OF WYEOMYIA
(DIPTERA: CULICIDAE).

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The appearance of the "Flora of the Panama Canal Zone" by Paul C. Standley (Smithsonian Institution, United States National Museum, Contributions from the United States National Herbarium, Vol. 27, 1928), makes it convenient to note those of the plants listed that hold water in their leaves or bracts in which mosquitoes breed. These mosquitoes, as is well known, are peculiar to the several plants, and occur nowhere else, so that the problem is one of scientific interest and not of any economic importance in any instance as yet known. The adults frequent their special plants, never occur in large numbers, and while some species are occasionally found in houses, no serious amount of annoyance has been reported from any of them. The following are the plants, arranged by families, and the species of mosquitoes which inhabit them:

Family ARACEAE.

Genus PISTIA Linn.

This floating water plant has a number of mosquito larvae which are associated with the roots. *Mansonia titillans* Walk. is commonly associated, the larvae getting air from the vascular roots which they cut with their air-tubes. *Culex aikenii* Aik. also commonly occurs among the roots, which, however, are not pierced. *Culex egcymon* Dyar has also been so found, but it has other habitats as well.

CALADIUM Vent. and COLOCASIA Schott.

Dendromyia melanocephala D. & K. is a characteristic inhabitant of the water in the leaf-axils of these plants, and as these are often cultivated around houses, the little white-footed mosquito may be frequently seen. It is much preyed upon in the larval state by the larvae of *Goeldia longipes* Fab., which inhabit these plants as well as others. *Dendromyia prolepidis* D. & K. has also rarely been found in "elephant's ear."

XANTHOSOMA Schott and MONOTRICHARDIA Crüger.

These plants harbor *Miamyia ypsipola* Dyar, *Dendromyia prolepidis* D. & K., *Dendromyia complosa* Dyar and presumably *Dendromyia jocosa* D. & K., which has not yet been bred. They are preyed upon by the larvae of *Goeldia longipes* Fab. and *Isostomyia espini* Mart., the latter often taken indoors as adults, presumably seeking shade.

Family BROMELIACEAE.

Genus ANANAS Adans.

Ananas magdalenae André has been much overlooked as to its mosquito fauna until lately with the work of Mr. C. H. Bath. *Dendromyia intonca* D. & K., described from *Tillandsia*, has been found to be only accidental in that plant, but at home in *Ananas*. A new species of *Wyeomyia* was discovered by Mr. Bath, to be described as follows:

WYEOMYIA (WYEOMYIA) CHARMION Dyar, new species.

Male.—Proboscis about as long as the abdomen, swollen at tip; prothoracic obes dark bronzy brown, of the color of the mesonotum; abdominal colors separated on the sides in a straight line; legs bronzy black, mid tarsi brassy white on one side; hind tarsi marked with white at base of the third joint below and all but the tips of the fourth and fifth; outstanding scales of the wing linear. Hypopygium: Clasper with long slender stem; mid lobe moderate with central point and shoulder on each side, a row of fine long hairs running on a ridge to tip; outer arm with large basal shoulder, slender, with two setae; inner arm thick, rather large, hooked; core arm large, about as large as mid lobe though shorter, hairy on its basal angle only.

Larva.—Abdominal hair tufts stellate, in about eight; lateral comb of the eighth segment of about 24 large scales in a straight row; air-tubes subfusiform, tapered at tip, about seven times as long as wide at base, with scattered single hairs, the basal ventral one double; dorsal hairs of anal segment a long one on each side, lateral hair double, long, subventral tuft short, multiple.

Type, male, No. 41,103, U. S. Nat. Mus.; bred from water in the leaves of *Ananas magdalenae* growing at the head of Stream No. 7, Agua Clara Reservoir, near Gatun, C. Z., January, 1928 (C. H. Bath).

In *Ananas* also occur *Culex imitator* Theob. and *Anopheles cruzii* D. & K., also inhabitants of the large *Tillandsia* and *Vriesia*. Some predator doubtless occurs also, but has not been discovered.

Genera AECHMEA R. & P., VRIESIA Lindl. and TILLANDSIA Linn

These plants harbor *Wyeomyia celaenocephala* D. & K., *W. scotinomus* D. & K., *W. guatemala* D. & K., *W. simmsi* D. & K., *W. melanopus* Dyar, *Dendromyia phroso* H., D. & K., (probably), and *Dendromyia circumcincta* D. & K. With them are associated *Culex imitator* Theob., *C. jenningsi* D. & K., *C. daumas-tocampa* D. & K., those peculiar little *Culex* breeding nowhere else and comprised in the subgenus *Microculex*, and *Anopheles cruzii* D. & K., Dr. Lutz's celebrated vector of "forest malaria," which Dr. Davis has lately shown to be probably harmless. These are preyed upon by *Megarhinus superbus* D. & K. larvae, which are inhabitants only of these plants.

Family MUSACEAE.

Genus **HELICONIA** Linn.

The flower-bracts of the species of *Heliconia* whose flowers are upright contain gummy water in which live *Dendromyia chalicephala* D. & K., *D. ulocoma* Theob. and *D. pseudopecten* D. & K. They are preyed upon by the larvae of *Goeldia longipes*.

Family CANNACEAE.

Genus **CALATHEA** Meyer.

The flower-bracts of these plants hold water much as in *Heliconia*. Here the following species find their larval home: *Dendromyia eloisa* H., D. & K. and *D. canonus* H., D. & K. They are preyed upon by the larvae of *Isostomyia magna* Theob. (*dicellaphora* H., D. & K.).

This makes 23 species of mosquitoes which inhabit solely the water in living plant tissues in the Canal Zone, 18 Sabethids, 3 *Culex*, 1 *Megarhinus* and 1 *Anopheles*. There are known 17 other species of Sabethids in the Canal Zone or nearby Panama, of which 13 are known to live in the water in dead plant tissues such as tree-holes, nut-husks and broken bamboo-joints. Of the four species whose life-history is unknown, *Sabethes tarsopus* D. & K. and *Miamyia florestan* Dyar probably live in tree holes or husks, leaving only *Dendromyia clasoleuca* D. & K. and *Goeldia leucopus* D. & K. as possible additional species to the list of those inhabiting living plant tissues.